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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,323	01/04/2001	Toshikazu Ura	F-6768	7228

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New York, NY 10168

EXAMINER
TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
1745	

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15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/719,323	Applicant(s) URA, TOSHIKAZU	
	Examiner Susy N Tsang-Foster	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sh et with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 April 2003 and 06 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/3/2003 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

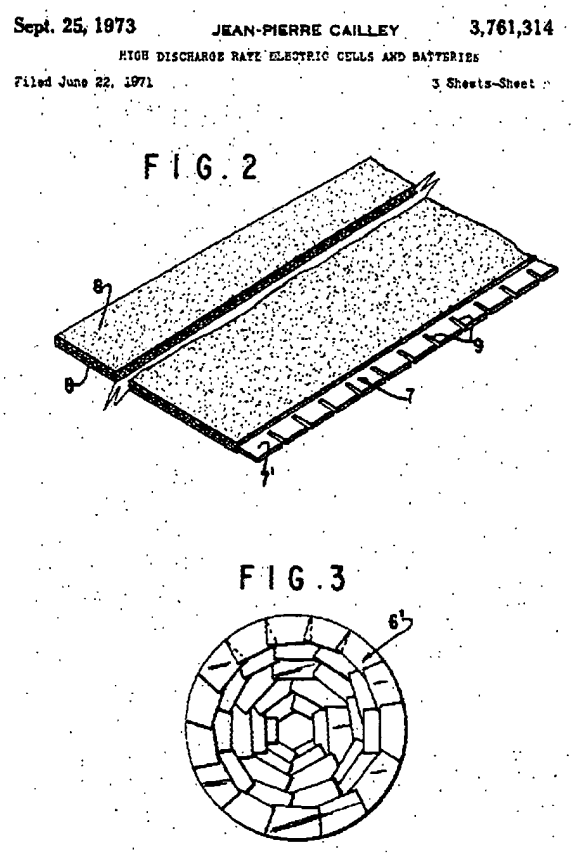
3. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 1, 5, and 10, the limitation "a flat surfaced pressing member" is not in the original disclosure. Instead, the specification discloses a "a pressing member 14 from one end

aperture of the molding jig 13" on page 14 of the specification and is silent about the texture of the surface of the pressing member 14.

In claims 9 and 14, the limitation "a top edge portion of the at least one first current collector is bent orthogonally with respect to the axis of the spiral and forms a continuous spiral edge" is not in the original disclosure. The original disclosure does not show a continuous spiral edge that is bent orthogonally with respect to the axis of the spiral because there is no top view or bottom view of the electrode plate group in the Figures or any mention in the specification that a top edge of either the first current collector or the second current collector forms a continuous spiral edge bent orthogonally with respect to the axis of the spiral. The method depicted in Figure 2 does not ensure a top edge of the first current collector that forms a continuous spiral edge bent orthogonally with respect to the axis of the spiral.

As admitted by the applicant on page 15, lines 1-5 of the specification, folding may occur to some extent using the method depicted in Figure 2. Since there is no mention of slits being made at the edge of the current collector, the folding of the edge of the current collector into a plane will not result in a continuous spiral edge with a perfectly flat plane of 90°. Furthermore, folding of the edge onto itself may result in a discontinuous spiral edge. The edge of the current collector must be slit in order to form a continuous spiral edge with a flat plane of 90° as disclosed by Jean-Pierre Cailley in Figures 2 and 3 and reproduced below (US 3,761,314).



Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, the limitation "said at least one first current collector and said at least one second current collector being formed by being inserted into a cylindrical molding jig" is

indefinite because it is unclear how the current collectors are formed by being inserted into a molding jig because the current collectors are present before the electrode plate group is inserted into the molding jig as disclosed in the specification. Furthermore, it is also unclear in the limitation how something can be formed by being inserted into a molding jig if it is already present as recited in "being formed by being inserted".

For the purposes of prosecution of claim 5, the limitation is interpreted as "said flat plane of the at least one first current collector and said flat plane of the at least one second current collector being formed by inserting the electrode plate group into a cylindrical molding jig".

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 5, 6, 9-11, and 14-16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the JPO Machine translation for JP 10-021953 A.

See Figures 2 and 3 and paragraphs 9, 18-26, 37, and 38 of the JPO Machine Translation for the reference.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (US 4,332,867) in view of Jean-Pierre Cailley (US 3,761,314).

The product-by-process limitations of claims 1-7 and 15 are not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (see In re Thorpe, 227 USPQ 964, (CAFC 1985), In re Brown, 173 USPQ 685 (CCPA 1972), and In re Marosi, 218 USPQ 289, 292-293 (CAFC 1983)).

In claim 1, the process limitation "said electrode plate group being formed by being inserted in a cylindrical molding jig and being subjected to pressure by a flat surfaced pressing member from an aperture of the cylindrical molding jig sufficient to flatten said electrode plate group, whereby the flat plane is formed at the one side of the electrode plate group" is not given patentable weight in a product claim.

In claim 2, the process limitation "by pressing said projected portions of the current collectors at opposite ends of the electrode plate group in directions along the winding axis of the electrode plate group" is not given patentable weight in a product claim.

In claim 3, the process-limitation "is laser-welded" is not given patentable weight in a product claim.

In claim 4, the process limitation "the flat planes being formed by pressing said ribs against the projected portions of the current collectors" is not given patentable weight in a product claim.

In claim 5, the process limitation "said flat plane of the at least one first current collector and said flat plane of the at least one second current collector being formed by inserting the electrode plate group into a cylindrical molding jig, and being subjected to pressure by a flat surfaced pressing member from an aperture of the cylindrical molding jig sufficient to flatten said electrode plate group, whereby the flat plane of the at least one first current collector and the flat plane of the at least one second current collector are formed at opposite ends of the electrode plate group" is not given patentable weight in a product claim.

In claim 6, the process limitation "the flat planes are formed by pressing the at least one first current collector and the at least one second current collector at opposite ends of the electrode plate group in directions along the winding axis of the electrode plate group" is not given patentable weight in a product claim.

In claim 7, the process limitation "laser-welded" is not given patentable weight in a product claim.

In claim 15, the process limitation "wherein the flat plane of the at least one first current collector and the flat plane of the at least one second current collector are formed simultaneously" is not given patentable weight in a product claim.

Tsuda et al. disclose a nickel-cadmium cell (which is inherently rechargeable) comprising (col. 1, lines 1-9) an electrode plate group which comprises a first current collector (positive plate) and a first electrode material adjacent the first current collector; a second current collector (negative plate), and a second electrode material adjacent the second current collector; an intervening separator for separating the first current collector and the first electrode material from the second current collector and the second electrode material; an electrolyte; a battery container for accommodating the electrode plate group and the electrolyte (col. 1, lines 1-9; col. 3, line 6 to col. 4, line 64 and Figures 1-5).

The separator is disposed between the positive and negative current collectors to form a spiral wound assembly and the positive and negative current collectors are offset from each other and also from the separator to leave respective edge portions of the positive and negative current collectors and one on each end of the spiral (coil) assembly and edge portions of the respective positive and negative current collectors are kept free of active material (col. 1, lines 49-60). Positive and negative collector plates are welded to the respective edge portions of the positive and negative current collectors (col. 4, lines 61-64). The positive and negative collector plates are welded in the radial direction at a plurality of locations in the circumferential direction with respect to the plane of the ends of the spiral assembly (see Figures 2-4 and col. 5, lines 3-46). Tsuda et al. also disclose that the current collectors may be corrugated (ribs), ruffled or embossed (col. 8, lines 20-26).

Tsuda et al. do not disclose that edge portions of the positive current collector and the negative current collector are bent at a 90° angle to form a flat plane at both ends of the electrode

plate group, and that a top edge portion of the first current collector is bent orthogonally with respect to the axis of the spiral to form a continuous spiral edge.

Jean-Pierre Cailley teaches slitting and bending edge portions of the positive current collector and negative current collector that are free of active material at a 90° angle to form respective continuous spiral edge flat plane bent orthogonally with respect to the spiral at both ends of the electrode plate group that are welded to first and second collector plates and effective contact results between the collector plates and the respective flat plane of the current collector due to the reliable welds that can be made between two relatively large contacting areas capable of bearing high pressures during welding (col. 1, lines 13-34; col. 2, lines 7-15 and lines 32-45; col. 3, lines 5-37 and lines 65-75; col. 4, lines 15-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to slit and bend edge portions of the positive current collector and negative current collector at a 90° angle to form respective continuous spiral edge flat plane with respect to the axis of the spiral at both ends of the electrode plate group that are welded to first and second collector plates because effective contact results between the collector plate and the corresponding flat plane of the current collector due to the reliable welds that can be made between two relatively large contacting areas capable of bearing high pressures during welding.

Response to Arguments

10. Applicant's arguments filed 4/3/2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., structure with strength and electrical reliablity) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicants' arguments that Jean-Pierre Cailley fails to teach current collectors bent at a 90 degree angle to form a flat plane and that as can be seen in Figures 1, 4, and 6 of Jean-Pierre Cailley do not show the collectors 5 clearly forming a flat plane, Figures in patents are not drawn to scale unless it is stated otherwise in the patent and Cailley at column 3, lines 23-30 states that edge portions that are not covered by active material are bent down in a substantially perpendicular direction which would form a substantially flat plane at one end of the electrode plate group.

In response to applicants' arguments that one of ordinary skill in the art would readily appreciate how to obtain a continuous spiral edge in light of the present disclosure, the Examiner disagrees for reasons given in the previous office action. Specifically, the method depicted in Figure 2 does not ensure that a top edge of the current collector forms a continuous spiral edge bent orthogonally with respect to the axis of the spiral. A person of ordinary skill in the art would recognize that the method depicted in Figure 2 does not give a continuous spiral edge even though the current collector can bent easily since the pleats are formed randomly during the crushing step and do not necessarily form a continuous spiral.

Allowable Subject Matter

11. Claims 12 and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Thursday from 9:30 AM to 8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/12 July 2003

Susy Tsang Foster